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end

layer is formed so as to contain the second diffusion layer and side walls are formed on the side walls of the opening. A fourth impurity diffusion layer in the third impurity diffusion layer is formed in the opening surrounded by the side walls.

IN THE CLAIMS:

Please cancel claims 1 to 6 without prejudice or disclaimer.

Please retain claims 7-8, without change, amend claim 9 and add claims 10-15. Claims 7-15 are presented here for the convenience of the Examiner.

7. (unamended) A method of fabricating a bipolar transistor comprising the steps of:

forming on a semiconducting substrate a first insulating film having a pattern in which the surface of the semiconducting substrate is partially exposed from said first insulating film;

sequentially forming a first conductive film and a second insulating film over the surface of said

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semiconducting substrate formed with said first insulating film, and then forming an opening portion so as to expose the surface of said semiconducting substrate;

forming a third insulating film on said opening portion and said conductive film;

forming a first impurity diffusion layer having a first conducting type by applying ion implantation to said semiconducting substrate at a first energy through said third insulating film;

forming a second impurity diffusion layer having the first conducting type by applying ion implantation to said semiconducting substrate at a second energy;

forming a third impurity diffusion layer having the first conducting type in said semiconducting substrate connected to said first conductive layer;

forming side walls made of a fourth insulating layer on side walls of said opening portion of said semiconducting substrate in which said first, second and third impurity diffusion are formed;

forming a second conductive film in said opening portion so as to be connected to said first impurity diffusion layer; and

forming a fourth impurity diffusion layer having a second conducting type in said second impurity diffusion

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layer by ion implantation applied through said second conductive layer.

8. (unamended) A method of fabricating a bipolar transistor according to claim 7, wherein said second impurity diffusion layer is formed by ion implantation at said second energy, and thereafter a fifth impurity diffusion layer is formed under said first impurity diffusion layer by ion implantation at a third energy.

Please amend claim 9 as follows:

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9. (once amended) A method of fabricating a bipolar transistor according to claim 7, wherein said first energy is lower than said second energy.

Please add the following new claims:

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10. (new) A method of fabricating a bipolar transistor comprising:

forming a graft base layer from a first impurity diffusion layer created by ion implantation, wherein said graft base layer is of a first conducting type and is formed in a semiconductor substrate;

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forming a first conductive film on said semiconductor substrate which is connected to said graft base layer;

forming an opening in said first conductive film;

forming a link base layer from a second impurity diffusion layer created by ion implantation, wherein said link base layer is of the first conducting type, is formed in a portion of said semiconductor substrate which is exposed by said opening portion, and is connected to said graft base layer;

forming a base layer from a third impurity diffusion layer, wherein said base layer is of the first conducting type, is formed in said semiconductor substrate, and is formed to contain said link base layer;

forming side walls in said opening portion from an insulating film, said side walls defining a central aperture; and

forming an emitter from a fourth impurity diffusion layer created by ion implantation, wherein said emitter is of a second conducting type, is formed in a portion of said semiconducting substrate exposed by said central aperture, is surrounded by said side walls, and is formed in said base layer;

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wherein said link base layer has a diffusion depth equal to or less than a diffusion depth of said emitter layer.

11. (new) A method as claimed in claim 10, further comprising forming a collector from a fifth impurity diffusion layer, wherein said collector is of the second conducting type, is formed directly under said link base layer and has a maximum impurity concentration with a diffusion depth deeper than a diffusion depth for a maximum impurity concentration of said base layer.

12. (new) A method as claimed in claim 11, further comprising reducing an impurity concentration in a lower portion of said base layer with said collector layer.

13. (new) A method as claimed in claim 11, further comprising forming said graft base layer with a gap therein aligned with the opening in the first conductive film.

14. (new) A method as claimed in claim 11, wherein said forming a link base layer further comprises forming

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